

Research on the Optimization of University Financial Sharing Mode Based on Blockchain Technology

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ABSTRACT

The financial sharing center is a model for enterprises to promote standardized, centralized, and informatized management, and is an effective means to enhance the risk control and capital management of branches. This article first describes the application status of blockchain and financial sharing platforms, and proposes technical reform opinions for the construction of financial sharing platforms in colleges and universities, and conducts optimization research on financial sharing service models on the basis of blockchain technology.

Keywords: Blockchain, colleges and universities, financial sharing

1. ACADEMIC HISTORY AND RESEARCH TRENDS OF RELATED RESEARCH AT HOME AND ABROAD

In foreign countries, Robert Gun et al. (1993) proposed the concept of shared service for the first time. Its connotation is a new management mode, which enables enterprises to reduce management levels and carry out decentralized management so as to improve efficiency and reduce costs[1]. Donna (1996) proposed that financial sharing service could be used to rationally allocate enterprise resources. ACCA Report (2002) proposed the establishment of cross-country and regional enterprise financial sharing service center to make the information more comprehensive and authentic, and improve the efficiency of decision-making and analysis. Fahy (2005) proposed that financial sharing services help standardize and refine enterprise processes, enable enterprises to focus on the development of core industries and improve their competitiveness[2].

Bushman R (2004) pointed out that American colleges and universities already have a relatively complete financial information system, which includes budget management, fund management, financial analysis and decision-making, forming a complete management system[3].

Jun Zseng-Guangbiao Sun(2017) believes that the level of financial informatization in colleges and

universities reflects the management and service level of a school. Improving the ability to analyze and apply financial data, strengthening the management of financial information in colleges and universities, and building an accounting informatization system to meet the needs of college personnel mark the maturity of the management and service level of colleges and universities[4].

Domestic research on financial sharing service is relatively late, and its definition comes from the basis of relevant foreign research. The standardization of financial sharing helps the whole business process become more organized, centralized and efficient. He Ying, Zhou Fang et al. (2013) conducted an empirical analysis on the influencing factors of financial sharing center and found that performance appraisal, salary and welfare, organizational structure, new information technology, strategic layout, staffing and health have significant positive effects on the construction of financial sharing. In the risk research after its construction, its construction will face from the management personnel role change, organization and transfer framework, the selection and construction of its layout address, implementation and control management are related to risks[5]. Qiu Ying et al. (2019) set up a financial sharing service center for government organizations by applying theories related to financial sharing, so as to improve the quality of financial information disclosure, budget management and internal control efficiency of government organizations. Some

scholars put forward the establishment of financial sharing service centers within universities[6]. Han Junshi (2016) constructed a network of financial sharing service centers among universities based on cloud computing and a pattern structure[7]. Yu Linlin (2019) constructed the Financial Sharing service Center of Heilongjiang Universities, and discussed the positive role of blockchain technology on it[8].

2. RESEARCH SIGNIFICANCE

The outline of the 14th Five-Year Plan includes a separate section on the digital economy, and among the main targets is to raise the value added of the core industries of the digital economy to 10% of GDP by 2025. The outline states that efforts should be made to build China into a cyber power, accelerate the building of a digital economy, a digital society and a digital government, and drive changes in the mode of production, lifestyle and governance through digital transformation. We will focus on key areas such as high-end chips, operating systems, artificial intelligence algorithms and sensors, and accelerate breakthroughs in research and development and iterative applications of basic theories, algorithms and equipment materials. We will foster and strengthen emerging digital industries such as artificial intelligence, big data, blockchain, cloud computing and cyber security, and upgrade industries such as communications equipment, core electronic components and key software. It also encourages enterprises to open up search, e-commerce and social networking data, and develop third-party big data services. We will promote the sound development of the sharing economy and platform economy.

With the comprehensive implementation of the accounting system of the new government in colleges and universities and the continuous promotion of the overall plan of "double first-class" construction, it provides a good historical opportunity and development opportunity for the innovation and reform of the financial management mode of colleges and universities. Many enterprise groups have successfully established financial sharing service centers, such as ZTE, Haier, Huawei and other financial sharing service centers, and achieved remarkable results.

At present, the situation of information isolated island in many colleges and universities is serious, the quality of information disclosure is not high, and it is difficult to meet the needs of quick reimbursement for teachers and students, data information sharing and so on. Therefore, most colleges and universities integrate the homogeneous and repetitive basic financial accounting work, build a financial sharing information platform, maximize financial efficiency through process optimization and reengineering, and gradually implement the financial sharing service mode. Big data and cloud computing, artificial intelligence, the wide

application of information technology such as block chain heralds the advent of the era of intelligence, especially in recent years the rapid development of chain blocks, making the financial Shared services of intelligent innovation is more reliable technical support, upgrade for the operational efficiency of finance in colleges and universities, the collaborative communication, strategic decision support and risk control plays a positive role, It is of great significance to improve the management level of colleges and universities.

3. EXISTING PROBLEMS

3.1 Technical risks.

Financial shared service center involves the organic integration of many business systems, which may have technical risks such as insufficient system integration and integration ability and unreasonable platform design.

3.2 The financial sharing service model of colleges and universities has security risks.

After colleges and universities adopt the financial sharing mode to establish financial sharing centers, their data storage still relies on the Internet and internal information systems of enterprises. All raw data flows into the headquarters and is highly centralized in a shared center, which greatly increases the security risk of data.

3.3 The development of financial informatization in colleges and universities lacks compound professionals.

At present, the construction of financial management informatization in colleges and universities not only needs to understand the financial affairs of colleges and universities, but also needs to cultivate professionals who are relatively proficient in the development and application of financial software. In detail, they should have relatively high accounting business processing skills, higher financial management ability, proficient computer network knowledge, basic computer maintenance skills and the ability to solve problems in the actual financial management work.

3.4 The financial budget and asset management mechanism of colleges and universities is not perfect.

At present, the financial organization structure of most colleges and universities is inclined to accounting and light management, which leads to the relative chaos of financial management. First, the financial budget management of colleges and universities is not scientific

enough, budget as an important part of financial management, but due to the different budget objectives of various departments, considering their own interests, wanton competition for college funds, resulting in inter-departmental conflicts occur from time to time. There are also some colleges and universities on the fund management is more arbitrary, and it is difficult to effectively supervise the income and expenditure of funds, which increases the financial risk of the school. Second, financial asset management is not standardized enough. Many colleges and universities are not clear about their family background, and the loss of property is serious. Many colleges and universities only pay attention to the management of large equipment procurement, and the equipment maintenance after purchase is not good, many departments buy some useless equipment assets to seek funds, resulting in the whole school asset management is very chaotic.

3.5 Asymmetric information, difficult to real-time sharing, easy to produce "information island" phenomenon.

The general departments of colleges and universities are Academic Affairs Office, Academic affairs Office, Personnel Office, state assets Office, science and technology Office, logistics management Office and other departments. All the above departments are closely connected with the Finance Department, but the data transmission between them is mainly through paper version or electronic file form. With the issuance of the National Informatization Development Strategy from 2006 to 2020, most departments of colleges and universities have independently developed management information system, but the system operates independently, which makes the information transfer between each other slow. Luo Yongping and Ding Weize (2009) used the prisoner's dilemma to explain the reasons for the formation of "information island". Prisoner's dilemma refers to the situation in which both parties are led to disadvantage after a crisis of confidence due to mismatched information. Crisis of confidence is an ethical term. Said social interpersonal produce a lot of hypocrisy and dishonest, about a serious crisis in terms of the relationship between people, is refers to societies or groups of certain moral principles and norms do not comply with by people, between people lacks a moral contact and constraint, each other can't believe each other's sincerity and loyalty, so can't charged with each other to burden. In order to consider the cost of their own operation construction and security maintenance, colleges and universities can not only reduce the actual cost of obtaining information from each other, but also gradually standardize the format of information and gradually improve the quality of their own information under the condition of mutual trust. However, due to the disunity of data format norms among colleges and universities and the potential hidden

dangers of their own information savings, it is difficult for colleges and universities in the society to appear the above situation.

4. THE CONSTRUCTION OF FINANCIAL SHARING SERVICE MODE OF COLLEGES AND UNIVERSITIES BASED ON BLOCK CHAIN TECHNOLOGY

4.1 Use blockchain technology to coordinate budget, accounting and final accounts.

The department budget and internal budget of university funds adopt the "two up and two down" compilation method. When preparing the departmental budget, all the secondary units in the university check the declared budget amount and actual accounting amount of the previous year through the financial sharing service center, and find the problems through comparison, and then provide the basis for the budget preparation of the current year. In the preparation of the budget of scientific research funds, there should be online or offline participation of professionals, financial personnel and auditors in the research group, so as to fully communicate with each other from the perspective of scientific research business, financial accounting and final audit acceptance, so as to ensure the smooth realization of the integration of industry and finance. Through mutual exchange and sharing of information in the budget system, financial accounting system and final accounts system, problems can be found in the implementation process in time to avoid budget adjustment and accounting adjustment at the end of the year or other acceptance nodes, and to ensure the smooth completion of the final accounts of funds.

4.2 Strengthen branch management and control with the participation of blockchain technology participants

In essence, the financial sharing center implements integrated management of branch business and finance through process reengineering, standardized and centralized operation, so as to realize data centralization, information collection, efficiency improvement and enhanced control ability. In practical operation, the financial sharing center has problems such as information leakage and lose control in outsourcing, crowdsourcing and other businesses, which poses challenges to the centralized sharing mode such as Financial sharing fees based on blockchain technology of finance and also poses threats to the strengthening of business control and financial concentration. Although the financial sharing center realizes the centralization of the group's financial information and decision-making, it is decentralized, inefficient and passive for branches. Blockchain technology fully realizes confidentiality and

security. In view of the risk of disclosure in outsourcing and crowdsourcing of financial sharing centers, relevant participants can be added to the chain of blockchain technology. Participants should include outsourcing personnel, corresponding docking personnel and supervision personnel. New blocks can be added to the financial sharing center blockchain, and new blocks are set up after specific participants complete orders. Other nodes of the network center jointly review the effectiveness of the new block, so as to realize mutual supervision and mutual evaluation between each node of the network center

4.3 Financial sharing university process reengineering based on block technology.

Expense reimbursement is the most important work of the financial department in colleges and universities, so it is very important to improve the management effect. Procurement, budget and scientific research work is of great significance to standardize school procurement behavior, speed up the budget implementation progress, improve scientific research achievements, and strengthen the construction of clean government. Meanwhile, information disclosure is of great significance to protect the relevant interests of the main body to obtain university information in accordance with the law and alleviate social conflicts. Therefore, this paper designs five modules: expense reimbursement, procurement management, budget management, scientific research management and information disclosure. The five modules are the business layer in the 6-layer architecture of blockchain financial sharing mode. All data are connected to the chain, and work is carried out by consensus mechanism and P2P network. The work with modeling and judgment functions is automatically run by smart contract of the contract layer, and all data is stored in the data layer. In the Guidance on Comprehensively Promoting the Construction of management Accounting System issued by the Ministry of Finance, units are required to promote the construction of information system, make full use of the advantages of professional division of labor and information technology, establish financial sharing service centers, and accelerate the expansion of accounting functions from focusing on accounting to focusing on management decision-making.

5. POICY SUGGESTIONS ON PROMOTING THE IN-DEPTH APPLICATION OF BLOCKCHAIN TECHNOLOGY IN FINANCIAL SHARED SERVICE MODE

5.1 Measures to consolidate basic talents and knowledge supply.

The combination of blockchain technology and

financial sharing platform has put forward higher requirements for talents. It is urgent to cultivate talents with comprehensive quality. They not only need to have rich accounting knowledge, but also have a certain degree of understanding of blockchain technology, and can skillfully use the blockchain technology required in their work. Accounting personnel can be provided with blockchain technology training and continuing education to broaden the field of knowledge, encourage colleges and universities to adopt a management system suitable for the development level of modern information technology, and actively cultivate interdisciplinary accounting talents.

5.2 Fund management and information content exchange services.

The information content interactive service platform on campus has a join point for describing the administrative authority of character information content. The comprehensive service platform of the university financial sharing center is connected with the university budget management platform to promote the reasonable, legal and compliance management of university expenditure.

Various intelligent management systems on campus and off-campus management platforms are integrated into the comprehensive service platform of the financial sharing center of colleges and universities, so as to get rid of the information content fortress of various departments, complete the sharing of resources of colleges and universities and prevent information asymmetry.

6. CONCLUSIONS

In this paper, the financial control system of university asset management company is constructed completely and systematically. The effective combination of university management and control mode and modern financial management and control concept, with the help of computer technology, the use of centralized financial management and control mode, the establishment of shared accounting center, so as to realize the transformation of financial management function to management accounting. For the assets of the company to build a modern enterprise, prevent administrative ShiYeHua effect, improve the work efficiency, strengthen the supervision and control, provide financial basis for business decisions, let small and medium-sized college assets management company sustainable development in the reform and innovation, give full play to their role as the "firewall", coordinate the industrial group resources, to ensure that the operating assets value, promote the transformation of scientific research findings at colleges and universities.

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